group having 1-3 carbon atoms, with one "OH" group (n=1) on each aromatic ring and with two "CH_2OR" groups (m=2) also on each aromatic ring. See claim 1.

It is emphasized that the present claims recite that the compound (c), represented by the general formula (II), has, inter alia, the following specific features:

(i) compound (c) has four CH_2OR groups (m=2) and two OH groups (n=1) per molecule; and

(ii) compound (c) has fluoroalkyl groups as R^1 and R^2.

It is respectfully submitted that none of the cited references describe a compound, corresponding to compound (c) of the present claims, having the specific combination of features (i) and (ii) as in the present claims, and, thus, the claimed composition has novelty, even in light of the teachings of Tadayuki '268 and Tadayuki '063.

With response to Tadayuki '268, the compound the Examiner deems to correspond to the compound (c) in the present invention, has two CH_2OR groups, and the compounds in Examples 2 and 3 have no CH_2OR groups. In the Examples of Tadayuki '268, only the compound in Example 2 has fluoroalkyl groups, and such compound has no CH_2OR groups. Thus, while Tadayuki '268 discloses a variety of compounds in paragraph [0044], none of those compounds have the specific combination of features (i) and (ii) as in the present claims.

Tadayuki '063 discloses a positive-type, heat-resistant photosensitive polymer composition that, when thermally treated, becomes a polybenzoxazole-type heat-resistant polymer that is suitable as the passivation films, interlayer insulating films and so forth, of electronic components. The composition includes (i) a specific polyamide having a repeating unit expressed by General Formula I on page 8 of the English translation of this patent document, (ii) a compound that generates an acid

when exposed to light, and (iii) a compound having alkoxymethyl groups and phenolic hydroxyl groups in the molecule. However, Tadayuki '063 also does not disclose the composition as in the present claims, including the component (c) wherein, inter alia, m=2, n=1, each of the R's is independently hydrogen, methyl or ethyl , and each of R^1 and R^2 independently represents a fluoroalkyl group having 1-3 carbon atoms.

Thus, clearly, neither Tadayuki '268 nor Tadayuki '063 specifically names the compound (c) set forth in claim 1 nor the photosensitive polymer composition including such a compound, as presently claimed.

When it is necessary to select portions of teachings within a reference and combine them, e.g., to select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific compound, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated, i.e., if one of ordinary skill in the art is able to "at once envisage the specific compound within the generic chemical formula." In the case of *In re Petering,* 301 F.2nd 676, 133 U.S.P.Q. 275 (CCPA 1962), the prior art disclosed a generic chemical formula "wherein X, Y, Z, P, and R' represent either hydrogen or alkyl radicals, R a side chain containing a OH Group." The Court of Customs and Patent Appeals (predecessor to the Court of Appeals for the Federal Circuit) held that this formula, without more, can not anticipate a claim to a specific compound within the general formula since the general formula encompassed a vast number and perhaps even an infinite number of compounds. However, the court determined that a more limited class of preferred substituents consisted only of about 20 compounds and anticipated the claimed compound.

Here, the generic Formula II in the Tadayuki '218 and '063 publications encompasses a vast number of compounds. Such a broad generic formula encompassing a vast number of compounds can not anticipate the presently claimed composition.

Moreover, the preferred compounds of general Formula II described in paragraph 0044 Tadayuki '268 and in paragraph 0040 Tadayuki '063 are not within the scope of the claims of the subject application. Moreover, the examples of Tadayuki et al. '268 and '063 are not within the scope of the present claims.

Therefore, neither Tadayuki '268 nor Tadayuki et al. '063 anticipates the presently claimed invention.

Claims 1, 2, 4-10 and 12-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tadayuki '268. Claims 1, 4-10 and 12-15 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tadayuki '063. Applicants traverse these rejections and request reconsideration thereof.

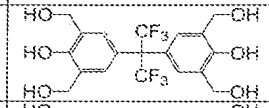
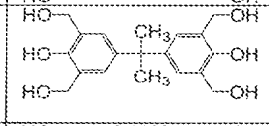
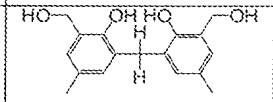
For the reasons noted above, neither Tadayuki '268 nor Tadayuki '063 discloses the photosensitive polymer composition presently claimed. Moreover, it is submitted the composition would not have been obvious over Tadayuki '268 or Tadayuki '063, especially in view of the unexpectedly advantageous results achieved by the present claimed composition. More particularly, by employing the compound (c) having both of the features (i) and (ii), the claimed composition can achieve effects such as high sensitivity, good shapes of the patterns, high resolution, transparency of the film, and heat durability of the film. If the compound (c) lacks even one of the features (i) and (ii), the composition can not achieve such effects.

For example, the comparison between the Example 1 and Comparative Example 4 (in which R1 and R2 compound (c) are not fluoroalkyl groups but alkyl

groups) demonstrates that lack of feature (ii) results in low sensitivity and poor pattern formation. When m=1 in the formula (II), the resulting composition would also have low sensitivity and poor pattern formation.

The Examiner alleges on page 14, lines 1 to 2 of the Office Action that the difference in the exposure energy does not appear to support a contention of unexpected results. This allegation is not appropriate, as will be explained referring to Table A below and Mr. Ooe's Declarations, including the attached third Declaration. In addition, the advantage of the present invention over the most pertinent example in the cited references will also be explained.

Table A

	Component (C)	Proper exposure energy (mJ/cm^2)	Exposure time (sec.)	Time for 103 shots (sec.)	Throughput (wafer/hr)	Tg (°C)	L-a+b
Ex.1 of the present application		280 [1]	0.56	57.7	62.4	320 [3]	94.3 [3]
Comp.Ex. 4 of the present application		320 [1]	0.64	65.9	54.6	318 [3]	91.7 [3]
Comp.Ex. C of the second Declaration		340 [2]	0.68	70.0	51.4	303 [3]	91.8 [3]

1) Values obtained in the Examples and Comparative Examples of the present Specification.
2) Value obtained in the Experiment in Ooe's second Declaration
3) Values obtained in the Experiments in Ooe's third Declaration

Importance of Sensitivity

Low necessity of exposure energy means less exposure time. Less exposure time means high throughput of production. Since numerous exposure treatments have to be performed, a small amount of exposure energy significantly affects the production efficiency.

In a typical semiconductor production, 300 mm wafers are subjected to exposure treatment with an i-line stepper. On a 300 mm wafer, typically patterns for 103 chips are laid out, and therefore 103 shots of i-line stepper exposure have to be performed per one wafer. The amount of energy for each shot is controlled by the exposure time.

When the required exposure is 280 mJ/cm^2 (Example 1 of the present Specification), the time for processing one 300 mm wafer is calculated to be 57.7 seconds. This means 62.4 wafers can be processed per hour. When the required exposure energy is 320 mJ/cm^2 (Example 4 of the present Specification, lacking the feature (ii)), the time for processing one 300 mm wafer is calculated to be 65.9 seconds. That means that only 54.6 wafers can be processed per hour. In this manner, the 40 mJ/cm^2 of difference in the exposure energy results in significant difference in productivity.

In Additional Comparative Example C in the second Declaration of Mr. Ooe (lacking the feature (i)), the required exposure energy is still higher, i.e., 340mJ/cm^2, and the time for processing one 300 mm wafer is calculated to be 70.0 seconds. That means that only 51.5 wafers can be processed per hour.

Transparency

In the process of producing a semiconductor device, fine positioning of the substrate with respect to the processing device is inevitable, and such positioning is performed by observing marks on the substrate via the resist pattern layer of the photosensitive polymer composition. Therefore, transparency of the polymer composition layer greatly affects the productivity and processing accuracy since low transparency of the layer results in low visibility of the marks on the substrate.

As demonstrated in Mr. Ooe's third Declaration, the layer of the present invention having the feature (i) has a higher (L-a+b) value than those of Comparative Example 4 (lacking the feature (ii)) and Comparative Experiment C (lacking the feature (i), having only two $-CH_2OR$ groups per molecule), and thus has high transparency.

Heat Durability

Some of the process of producing a semiconductor device can result in elevation of heat. Therefore, the photosensitive polymer composition layer having high heat durability enables high efficiency of processing. As demonstrated in Mr. Ooe's third Declaration, the layer obtained using the composition of the present invention has a higher glass transition temperature than that of Comparative Example C (lacking the feature (i), having only two $-CH_2OR$ groups per molecule), and therefore has higher heat durability.

Thus, clearly, the presently claimed invention provides unexpectedly advantageous results in comparison with the compositions described in Tadayuki '268 and Tadayuki '063. Accordingly, the presently claimed invention is patentable over the Tadayuki publications.

In view of the foregoing remarks and the attached Declaration, favorable reconsideration and allowance of all the claims now in the application are requested.

Applicants request any shortage in fees due in connection with the filing of this paper be charged to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP,

Deposit Account No. 01-2135 (case 1270.46327X00), and credit any excess payment of fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By **/Alan E. Schiavelli/**
Alan E. Schiavelli
Registration No. 32,087

AES/at
1300 17th Street N., Suite 1800
Arlington, Virginia 22209
Tel: 703-312-6600
Fax: 703-312-6666